

**REMARKS**

Claims 1-4 and 7-11 are pending in the present application. Claim 1 is herein amended. Claim 6 is herein cancelled. No new matter has been added. The proposed amendments are not considered to raise new issues which would require substantial consideration by the Examiner. Accordingly, entry of the amendments after final rejection is respectfully requested.

**Claim Rejections - 35 U.S.C. § 103**

Claims 1-4 and 6-10 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Nishimura et al (U.S. 6,300,404) in view of Katayama et al (U.S. 5,164,172). Applicants respectfully traverse this rejection.

The presently claimed invention is a curable resin composition which comprises a polyoxyalkylene polymer (a) containing at least one reactive silyl group in each molecule, 5 to 50 parts by weight of a hydrocarbon-based plasticizer per 100 parts by weight of (a) and 10 to 200 parts by weight of a needle crystal filler (c) on the same basis, wherein the needle crystal filler (c) is at least one member selected from the group consisting of sepiolite and wollastonite

The sepiolite is hydrous magnesium silicate and wollastonite is calcium silicate. The commercially available sepiolite, PANGEL S9, was used in the disclosed examples. The product specification sheet is herein submitted. The commercially available wollastonite, Wicro1140 (WICO40), was used in the disclosed examples. The product specification sheet is herein submitted. Neither sepiolite nor wollastonite is a calcium carbonate.

On the other hand, Nishimura et al relates to a curable polymer composition comprising an oxyalkylene polymer having a silicon-containing group and a paraffinic hydrocarbon. As acknowledged in the Office Action, Nishimura et al does not disclose the specific needle crystal filler embodiment of the presently claimed invention.

Katayama et al discloses a process for producing acicular aragonite calcium carbonate crystal. Katayama discloses that calcium carbonate crystals may be used as a thickener. Katayama does not disclose sepiolite or wollastonite.

The curable resin composition of the presently claimed invention can be highly extruded from a cartridge and, even upon application thereof to vertical adhered surfaces, can exercise its initial fixability to fix the substrates in an instant. Namely, the presently claimed invention is able to overcome the difficulties of the prior art by achieving both extrudability and initial fixability simultaneously.

Thus, presently claimed invention is not rendered obvious by Nishimura et al in view of Katayama et al. Applicants respectfully request reconsider and withdrawal of the rejection.

#### **Claim Rejections - 35 U.S.C. § 103**

Claim 11 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Nishimura et al (U.S. 6,300,404) and Katayama et al (U.S. 5,164,172) in view of Okamoto et al (U.S. 6,183,551). Applicants respectfully traverse this rejection.

Okamoto et al relates to a curable resin composition comprising saturated hydrocarbon polymer having at least one hydroxyl or hydrolyzable group and (B) a hydrogenated oligomer of a linear  $\alpha$ -olefin. Okamoto et al discloses that calcium carbonate may be used as an optionally filler.

As established above, neither Nishimura, Katayama nor Okamoto disclose sepiolite and wollastonite as a needle crystal filler and thus do not disclose the needle crystal filler embodiment of the presently claimed invention.

Therefore, the presently claimed invention would not have been obvious to one of ordinary skilled in the art at the time of invention based on the cited prior art references. Favourable reconsideration is earnestly solicited.

For at least the foregoing reasons, the claimed invention distinguishes over the cited art and defines patentable subject matter. Favorable reconsideration is earnestly solicited.

Should the Examiner deem that any further action by applicants would be desirable to place the application in condition for allowance, the Examiner is encouraged to telephone applicants' undersigned attorney.

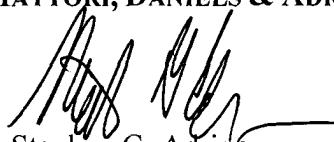
Application No.: 10/595,913  
Art Unit: 1796

Amendment Under 37 CFR § 1.116  
Attorney Docket No.: 062452

If this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,

**WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP**



Stephen G. Adrian

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SGA/bam

Attachments: Product Specification Sheets for PANGEL S9 (4 pages) and WICO40 (3 pages)

KING社

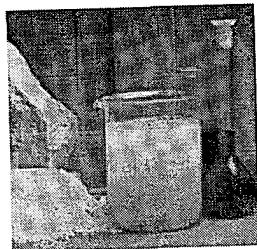
DSM社

TOLSA社

## 微粉末 セピオライト (MICRONIZED SEPIOLITE)

製造元 : GROPO TOLSA (スペイン)

輸入販売元 : 楠本化成株式会社



## ■■ セピオライト製品 ■■

セピオライト製品PANGEL及びPANSILはTOLSAが開発し特許取得した、特殊な物理化学的精製法、微粉末化法及び化学的処理法により、製造された多機能性添加剤です。

## PANGEL/PANSIL 性状表



14kb

## ■ PANGEL ■

PANGELはセピオライトを繊維としての形状を壊すことなく解纏したレオロジー添加剤です。増粘、擬似塑性及びチク性を付与します。この基本的作用の他、その吸着性の良さから、合成繊維の静電気を中和し、フィラーの混合/分散性を改善します。

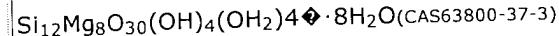
## ■ PANSIL ■

PANSILは吸着性の高い多機能添加剤です。その粒子のゼオライト孔は表面に向けて開放しており、それら粒子が不規則に凝集している微粉末です。

## ■■ セピオライト組成と特性 ■■

## 化学組成と構造

セピオライトは含水マグネシウムシリケートです。化学構造式は次の通りです：



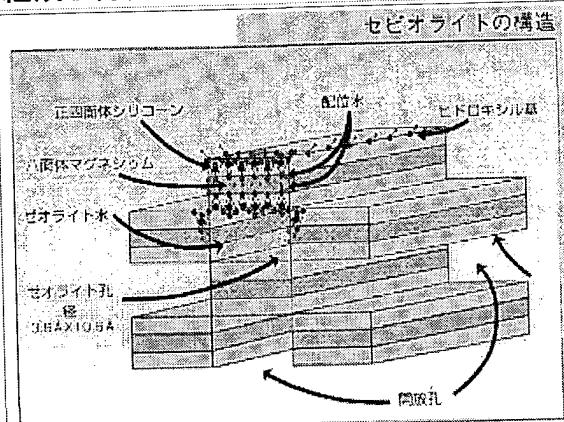
また、セピオライトはすべての粘土鉱物と同様に三層構造シリケート群に属します。セピオライトは、正四面体のシリカが二層と、その間の八面体のマグネシウム層で構成されており、この中心部は酸素でシリカ層と結合していますが、このマグネシウムは不連続層です。この構造がセピオライト粒子を微細繊維としています。

TOLSAセピオライトはスペイン・マドリッド郊外のビカルバロ峡谷の鉱山から採掘されます。このセピオライトは、中新世紀の乾燥気候下で湖沼地帯の沈殿が科学的変化を起こすことによって形成された堆積生成物です。この堆積物の埋蔵量と純度は世界最高で、またスペインはこの鉱物の世界最大の生産国です。

## 特 性

セピオライトの特性は、吸着性とレオロジー性の二つの基本的特性に基づいています。そしてこの特性が次の5つの構造特性に直接的に関係しています。

1. 外部表面の不規則性
2. 高密度の吸着活性センター
3. 針状様の粒子
4. 低導電性
5. 非膨潤性結晶構造



## セピオライトの性質

長さ(μm)	0.2 - 2.0
幅(Å)	100 - 300
厚み(Å)	50 - 100
ゼオライト孔(Å)	3.6 × 10.6
表面積 B.E.T.(m <sup>2</sup> /g)	320
気孔度-N2.吸着 20-200Å(cm <sup>3</sup> /g)	0.40
総気孔度(cm <sup>3</sup> /g)	0.70
比重(g/cm <sup>3</sup> )	2.0 - 2.3

融点(°C)	1550
硬度(Mohs)	2.0 - 2.5
カチオン交換容量(meq-100g)	10 - 15
屈折率	1.5

## INDUSTRIAL PRODUCTS

Construction

Civil engineering, support fluids and drilling

Environmental products

Filtration

Paints and coatings

PANGEL BMS2

PANGEL BMS1

PANGEL BM8

PANGEL BM7

PANGEL BM4

PANGEL M300

PANGEL M200

PANGEL M100

PANGEL S9

PANGEL S15

PANGEL AD

PANGEL HV

PANGEL BS

PANGEL B10

PANGEL B20

PANGEL B40

Asphalt and bitumin

Foundry

Industrial absorbents and desiccants

General industry

Agriculture

Animal nutrition

Home &gt;&gt; Industrial Products &gt;&gt; Paints and coatings &gt;&gt; PANGEL S9

# PANGEL S9

PDF

Video

## A mineral rheological additive for aqueous systems

A highly efficient powder rheological additive manufactured from high purity sepiolite, for the use in aqueous systems. It is a powder additive that modifies the aqueous systems to which it is added.

### Properties

Pangel S9 imparts excellent thixotropic and pseudoplastic properties to the system in which it is incorporated, improving stability and spreading properties:

At rest, it provides the system with a high consistency, which produces a suspending effect and a great resistance to settling, avoiding sedimentation.

Under a shear stress, Pangel S9 forces the viscosity to promptly fall down, easing manual and mechanical spreading and levelling.

Pangel S9 controls system flow and consistency, ensuring optimal distribution of solvents, fillers and other components.

Suspensions made with Pangel S9 are stable even at high electrolyte concentration. Its rheological behaviour is stable in a wide pH range and at high temperatures.

Pangel S9 keeps a high absorption capacity and a high degree of interaction with polymers.

Technical Data	
Color	Light beige.
Aspect	Fluid powder.
Presentation	9 Kg micro perforated Kraft paper sacks on 80x120cm pallets, with a standard weight of 35Kg.
Storage conditions	Dry location, protected from humidity.
Shelf life	1 year since date of manufacture, in original undamaged packages.

### Fields of application

- Mortar and plaster additive
- Suspending agent for liquid additives
- Asphalt sheets
- Asphalt emulsions
- Anti-corrosion coatings
- Water-based paints
- Foundry coatings
- Friction elements
- Joint fillers
- Epoxy adhesives
- Sealants and mastics

The homogeneity imparted to these systems by Pangel S9 allows, in some cases, its ability to enhance the effect of some of the key components of their formulations, therefore allowing for the reduction of the dose with a resulting cost saving.

### Recommendation for use

Pangel S9 can be incorporated to the formula during dispersion or mixing, as a post-additive or as a pre-gel.

### Dosage

Recommended addition rate for Pangel S9 can vary significantly depending on the system, ranging from 0,05% to 2%.

### Contact data

If you would like to receive further information on our product properties or on the best dosing for your specific system, please contact our technical sales personnel, via e-mail [pangel@tolsa.com](mailto:pangel@tolsa.com) or telephone number +34 913 220 100.





## Welcome to the world of Nordkalk Wollastonite

### Nordkalk has launched a new generation of wollastonite products

Nordkalk has launched a new generation of High Aspect Ratio wollastonite fillers. The name of the new product family is Nordkalk HARwoll wollastonite. Harwoll products are designed for thermoplastic and thermoset applications.

Wollastonite is a calcium metasilicate ( $\text{CaSiO}_3$ ) with the theoretical composition of 48,3%  $\text{CaO}$  and 51,7%  $\text{SiO}_2$ . It is the only naturally occurring white acicular mineral. It has been named after William Hyde Wollaston, the English chemist and mineralogist, who discovered the mineral in the late 1700s.

**Wollastonite is mainly used in the production of ceramics, plastics, elastomers, coatings, metallurgy and abrasive materials.**

**Nordkalk is the first and only one European Wollastonite producer. All Nordkalk high quality Wollastonite grades are mined and processed in Lappeenranta, Finland.**

#### Read more about:

- [The physical properties of wollastonite](#)
- [Products](#)
- [Applications](#)
- [How to become a registered user](#)
- [Contact us](#)



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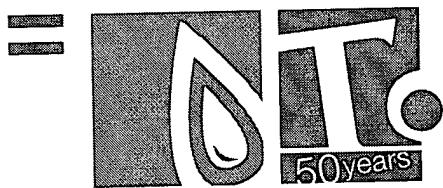
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FT-026-96

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PANGEL

A mineral rheological additive for aqueous systems.

